

REMARKS

Claims 25 - 31 were pending in the Office Action mailed November 3, 2005. The Examiner rejected claims 25-31 as being allegedly unpatentable. Applicant adds claim 32. Support for claim 32 may be found in at least lines 8-10 of page 11, and lines 2-3 of page 25 in view of lines 19-22 of page 23 of the application as filed. After entry of this Amendment, claims 25-32 will be pending.

Request for Acknowledgement of Consideration of Previously Submitted Reference

Applicant thanks the Examiner for returning the PTO 1449 form submitted on April 22, 2004, with the Information Disclosure Statement, indicating that he has considered the initialed references. However, Applicant notes that the Examiner's initials do not appear beside the non-patent reference, Academic Press, Academic Press Dictionary of Science and Technology, 1997, p. 467. Applicant requests that the Examiner return an additional copy of the PTO 1449 form submitted with the Information Disclosure Statement after considering and initialing the listing to indicate that he considered that reference. See MPEP § 609.

Patentability of Claims 25-27 Over U.S. Patent No. 2,544,109 to Richardson

The Examiner rejected claims 25 - 27 under 35 U.S.C. § 102(b) as allegedly being anticipated by U.S. Patent No. 2,544,109 to Richardson ("Richardson"). Applicant respectfully traverses. Richardson does not disclose or suggest at least "a joint body having a cylindrical projection adapted to be inserted into a pipe to be connected." Applicant's claim 25.

Richardson discloses a screw-type, self-flaring tube coupling with a screw-thread connection to connect a ductile pipe or tube 11 to a bore 12 formed in any desired

mechanism 13. Fig. 1; col. 1, lines 1-4; col. 2, lines 21-23. The pipe coupling has a body member 14 "formed with a mandrel 17 having a conical tube-flaring face 18 surrounded by a flare cavity 19 between the conical tube-flaring surface 18 and a cylindrical barrel surface 21." Col. 2, lines 28-32. Body member 14 also has internal threads on cylindrical extension 25. Col. 2, lines 36-38; Fig. 1. A hollow backing nut 23 is threadably engaged with the internal threads on cylindrical extension 25 and advances helically along tube 11 within body member 14. Such advancement separates an originally-integral tube clamping ferrule 26 and reduced tubular portion 31 from threaded cylindrical extension 24 of backing nut 23. Continued advancement deforms portions of tube clamping ferrule 26 into tube 11 in order to grip tube 11 and then advances tube 11 and ferrule 26 conjointly into recess 19, thereby flaring tube 11 by extrusion on conical tube-flaring face 18 of mandrel 17 and locking it in place with ferrule 26. Col. 2, line 36 - col. 3, line 13; line 47 - col. 4, line 21.

While no angle from the center axis of mandrel 17 for the specific cone defined by conical outer surface 18 is explicitly stated by Richardson, Figs. 1-4, 8, and 9, illustrate the conical surface 18 as forming an angle of approximately 45 degrees with the longitudinal axis of mandrel 17. A conical projection such as that depicted can not reasonably be considered "a cylindrical projection." In fact, Richardson itself characterizes the recess or flare cavity 19 as bounded by two distinctly shaped surfaces: a conical outer surface 18 of mandrel 17 and a cylindrical barrel surface 21. Moreover, in order to "flare" tube 11 and lock it in place, outer surface 18 of mandrel 17 must be significantly more conical than cylindrical, or else the coupling will not work for its intended purpose.

Accordingly, Richardson fails to disclose or suggest each and every limitation of claim 25 as required by 35 U.S.C. § 102(b) for anticipation.

With respect to claims 26 and 27, which depend from claim 25, they are patentable over Richardson for at least the same reasons as claim 25. Applicant therefore requests that the Examiner withdraw the rejections of all three of these claims and allow them.

**Patentability of Claims 28-30 over Richardson in view of
U.S. Patent No. 2,452,276 to Woodling**

The Examiner rejected claims 28-30 under 35 U.S.C. § 103(a) as allegedly being obvious over Richardson in view of U.S. Patent No. 2,452,276 to Woodling ("Woodling"). As claim 28 depends from claim 25, the Examiner relied on Richardson as allegedly disclosing all limitations but "a sleeve portion having at least one longitudinal slit." Applicant's claim 28. The Examiner relied on Woodling to provide motivation to modify Richardson with a longitudinal slit. Applicant respectfully traverses. As discussed above, Richardson fails to disclose or suggest "a joint body having a cylindrical projection adapted to be inserted into a pipe to be connected." Applicant's claim 25. Applicant notes that both Claims 29 and 30 also contain the "cylindrical projection" language, and thus Applicant's argument applies to each of these claims as well.

Woodling fails to cure at least Richardson's deficiency with regard to "a cylindrical projection." Woodling discloses another screw-type tube fitting or coupling device to connect a substantially round element or tube 26 to a coupling element 20. Fig. 1, col. 1, lines 8-12. The right-hand end of coupling element 20 has male threads 23 which are engaged with the female threads 22 of compression nut 21. Col. 2, line 53

- col. 3, line 5. As the compression nut 21 is threadably advanced onto coupling element 20, a split collar 34 is contracted by camming action from a tapered inner surface of compression nut 21 on the right hand and an oppositely tapered surface of a ring member 28 on the left hand side. Col. 3, lines 40-75. When contracted (when the opposing end surfaces 38, 39 of the split collar 34 touch each other), split collar 34 annularly engages the outer surface of the round element or tube 26 to cramp the tube against longitudinal movement with reference to the compression nut 21. See col. 1, lines 8-12 and Figs. 1, 3 and 4.

Woodling fails to disclose or suggest at least a "projection adapted to be inserted into a pipe to be connected." Applicant's claims 25, 29, and 30. Therefore, even if Woodling provides the motivation to modify the screw-type pipe coupling of Richardson, which Applicant does not concede and reserves the right to argue against, if necessary, a pipe coupling of Richardson as modified to include a longitudinal slit in tube clamping ferrule 26, would not cure the deficiencies of Richardson discussed in relation to claim 25. Accordingly, the combination of Richardson and Woodling fails to disclose or suggest each and every limitation of claim 28 as required under 35 U.S.C. § 103(a). See MPEP § 2143 (One of the three basic criteria of a prima facie case of obviousness is "the prior art . . . references when combined [] must teach or suggest all the claim limitations"). As the Examiner has not established a prima facie case of obviousness, Applicant respectfully requests that the Examiner withdraw the rejections and allow the claims.

New claim 32 depends from independent claim 29 and therefore is patentable over Richardson in view of Woodling for at least the same reason. Applicant requests that the Examiner allow this claim.

Patentability of Claim 31 over U.S. Patent No. 3,250,550 to Lyon in view of U.S. Patent No. 4,304,422 to Schwarz and in further view of Woodling.

The Examiner rejected claim 31 under 35 U.S.C. § 103(a) as allegedly obvious over U.S. Patent No. 3,250,550 to Lyon ("Lyon") in view of U.S. Patent No. 4,304,422 to Schwarz ("Schwartz") and in further view of Woodling. The Examiner alleged that Lyon disclosed almost all limitations of claim 31, but implicitly acknowledged that Lyon failed to disclose a "thin portion" "integrally connect[ing]" the alleged ring portion and alleged sleeve portion of claim 31, by noting "Lyon . . . does not disclose that the ring portion and sleeve portion are one integral member." Office Action at 4. The Examiner relied on Schwartz for motivation to modify Lyon to remedy this particular insufficiency of Lyon's teachings. The Examiner relied on Woodling for the motivation to modify the pipe coupling of Lyon with a longitudinal slit. Applicant respectfully traverses.

Neither Lyon, Schwartz, nor Woodling discloses or suggests at least "a joint body having a cylindrical projection adapted to be inserted into a pipe to be connected." Applicant's claim 31.

Lyon teaches another screw-type, self-flaring tube coupling. Fig. 1, col. 1, lines 1-3. In particular, Lyon discloses a self-flaring tube coupling with an externally threaded coupling body 10, and a tube 12 adapted to be connected to the coupling body 10. col. 2, lines 3-5. Coupling body 10 of Lyon threadably engages with internally threaded tube nut 14. Figs. 1 -2, col. 2, lines 6-8. Forward advancement of nut 14 deforms a portion of an internal member (biting lip 48 of compression sleeve 18) into the outer surface of tube 12 to grip tube 12 and advance it and separate internal ring 16 into the recess formed between the generally conical outer surface of nose 26 and the generally conical

inner surface 36 ("mouth 36") of coupling body 10. Col. 3, lines 3-19, 41-73, col. 4, lines 47-57, Fig. 3.

Notably, nose 26 is a separate piece-part that sits inside a bore of coupling body 10. Col. 2, lines 12-14. The outer surface of nose 26 includes a straight tapered surface 28 blending into an arcuate surface 30 at its periphery and terminating in a short radius 32 at the central flow passageway 34, as shown in Fig. 6. Col. 2, lines 14-18. Mouth 36 "begin[s] substantially radially opposite the arcuate surface 30 of nose 26" and tapers outwardly, to a cylindrical entrance 40. Col. 2, lines 18-23. Additionally, "at the opposite end of the taper 36 there is a more abruptly inclined portion 39 immediately adjacent the nose 26." Col. 2, lines 23-25.

No specific angle, or range of angles, from the center axis of nose 26 for the specific taper defined by straight tapered surface 28 is disclosed by Lyon, but Figs. 1-3 and 6, illustrate the tapered surface 28 as forming an angle of approximately 30 degrees with the longitudinal axis of nose 26. The conical nose depicted in Lyon can not reasonably be considered "a cylindrical projection." As discussed in the previous paragraph, Lyon, like Richardson, itself distinguishes conical, tapered surfaces from cylindrical ones. Moreover, like Richardson, in order to "flare" tube 12 and lock it in place, outer surface 28 of nose 26 must be more conical than cylindrical, or else the coupling will not work for its intended purpose.

Schwarz discloses yet another screw-type conduit coupling comprising a body member 12 with an axial bore 14 which is adapted to receive the end of conduit 18, and a fastening member, nut 26, with a stepped, axial bore, which nut 26 is threadably fastened to body member 12. Fig. 1, Abstract, col. 3, lines 13-33. A sleeve 40 radially positioned around conduit 18 and within axial bore of nut 26 consists of a first end 46

having a frusto-conical surface 48 adapted to engage the inclined shoulder 32 of nut 26, and a second end 50, axially opposite the first end 46 connected by a frangible web 60 to first end 46. Col. 3, line 45 - col. 4, line 5; Fig. 2. Frangible web 50 is deformed and fractured as nut 26 advances toward body member 12. Col. 4, line 49 - col. 5, line 2. Further advancement causes both first end 46 and second end 50 to bite into the outer surface of tube 18 to grip tube 18. See Fig. 4.

Like Woodling, see discussion above at pp. 7-8, Schwartz fails to disclose or suggest a “projection adapted to be inserted into a pipe to be connected.” Therefore, even if Schwartz provided the required motivation to modify Lyon, which Applicant does not concede and reserves the right to argue against, if necessary, a screw-type, self-flaring tube coupling of Lyon as modified by Schwartz and Woodling still fails to teach each and every limitation of claim 31, as required for a *prima facie* case of obviousness under 35 U.S.C. § 103(a). See MPEP § 2143 (One of the three basic criteria of a *prima facie* case of obviousness is “the prior art . . . references when combined [] must teach or suggest all the claim limitations”). Therefore, Applicant respectfully requests that the Examiner withdraw the rejection and allow the claim.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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